Integrated Water Quality and Aquatic Communities Protocol – Lakes and Ponds

Standard Operating Procedure (SOP) #5: Site Arrival

Draft Version 1.0

Revision History Log:

Previous Version	Revision Date	Author	Changes Made	Reason for Change	New Version

This SOP explains the immediate tasks that need to be completed upon site arrival and includes the miscellaneous tasks associated with sampling that may not be included in other SOPs.

To reduce the possibility of transporting disease and exotic organisms to other sites, crews should keep their aquatic footwear and trail footwear separate. Upon reaching the proximity of the site, the crew should remove their hiking footwear, and don their aquatic footwear. Their hiking footwear should be left away from the aquatic habitat, to be used when all aquatic sampling is complete.

Establish a Working Area

1. Scout the lake, either by walking around or a visual scan, to select the best location to set up.
2. Choose this location based on the following criteria:
    a. Weather conditions – shady for hot days, sunny for cool days, and sheltered for windy days.
    b. Isolation from trails or campsites
        i. Although interaction between monitoring staff and the public is generally encouraged, park visitors may ask many questions that will distract the field crew, resulting in delays or processing errors.
    c. Always ensure that there is shade available for storage of processed water chemistry samples nearby. If this is not possible, be prepared to store the insulated cooler of samples within the lake itself, tethered to the shoreline.
    d. Lack of woody debris (i.e., large logs, roots, etc.) – this condition is necessary for the setting of the gill net (for fish sampling), as well as access for the inflatable raft. Slippery logs with sharp above or below water branch stobs (sharp stubs of broken off branches) can be very dangerous; they are best avoided. Moreover, they can snag and damage the gill nets, as well as puncture the raft.

e. Flat working area – working with vials, jars, and electronic equipment is hampered if the field crew must work on a steep slope. Note that a large flat rock on a slope may be adequate, provided it is stable.
f. Open vegetation – dense vegetation may facilitate the loss of small pieces of equipment (e.g., forceps).

Preparing Gear and Equipment

1. Inflate the two-person raft. Follow the manufacturer's recommended process for this. Inflate in an area that will minimize the risk of puncture.
    a. During the inflation process, double check that there are no leaks in the boat. If there are leaks, repair them immediately. The vulcanizing agent in the repair kit requires time to work (up to 30 minutes). For smaller punctures, duct tape may be an alternative solution. For large leaks, overnight repair using Seam Grip® or similar product along with patch material may be necessary.
2. Set up a water chemistry area in the shade. Using a pack towel or small tarp, arrange an area that will be debris/dirt free to minimize/eliminate contamination during water chemistry processing.
3. Unload remaining gear, minimizing "gear scatter." Keep things organized for specific tasks, and keep electronic gear out of the sun as much as possible. If shade is limited, place gear underneath field packs. Assess and anticipate the solar and shade paths to ensure that sensitive gear will stay in the shade through the sampling period, if possible.

Prepare and Pre-label Sample Vials

This is a procedure that can be done prior to arriving at the site (e.g., the member who is not driving can do this during transit or it can be completed the night before). If it has not been done prior, it should be done upon site arrival. Because the needs of the labels depend on the SOP (e.g., water samples versus invertebrates), the needs are detailed in later SOPs.

Preliminary Data Recording

1. Begin to fill in General Habitat data sheet (Appendix F).
    a. **Record** the crew names and any additional observers (e.g., park staff).
        i. Do not record "Bob" or "Nancy." Give full first and last names. Do not abbreviate the first name (e.g., no S. Smith; rather Sean Smith).
    b. **Record** the site name and the unique GRTS code.
    c. **Record** the date (use yyyymmdd format [e.g., 20081121 for the 21st November 2008]) and arrival time (use 24 hour time). Note this specific format is essential for data management and must be strictly adhered to.
    d. **Record** the trails and roads used to access the site and the time taken for each.
2. Use the Garmin 60/76CSx (or similar) GPS unit to determine and record the Latitude/Longitude of the set-up location. Ensure that the datum is in NAD 83 Zone 10.
3. Determine and record the county the lake is in using USGS topographic maps.